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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JASON SODERGREN

Appeal 2009-006337
Application 09/785,123
Technology Center 2400

Decided: June 4, 2010

Before JOHN A. JEFFERY, LEE E. BARRETT, and
LANCE LEONARD BARRY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 4-9, and 12-16. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

Appellant's invention pertains to a multi-protocol adapter that can communicate with remote computers over any of a variety of protocols. The

adapter includes an integrated CPU including an embedded operating system, where the operating system has software interface modules and device drivers. *See generally* Abstract; Spec. 3, 14-17. Claim 1 is illustrative with key disputed limitations emphasized:

1. A multi-protocol adapter for communicating with one or more remote computers over any one of a plurality of protocols, the adapter comprising:

an *integrated CPU including an embedded operating system*, said operating system including software interface modules and device drivers for one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of the plurality of protocols, wherein the operating system is capable of simultaneously communicating with the one or more computers running different protocols; and

a plurality of daughter board interface slots for accepting at least one daughter board interface modules for expanding the protocols of the multi-protocol adapter.

The Examiner relies on the following as evidence of unpatentability:

Abraham	US 5,530,842	June 25, 1996
Takahashi	US 5,751,827	May 12, 1998
Richter	US 5,905,885	May 18, 1999
Liebl	US 6,236,917 B1	May 22, 2001 (filed Dec. 21, 1999)
Reul	US 6,526,340 B1	Feb. 25, 2003 (filed Dec. 21, 1999)
Cambron	US 6,539,027 B1	Mar. 25, 2003 (filed Jan. 19, 1999)
Sodergren	US 2005/0083965 A1	Apr. 21, 2005 (eff. filed Feb. 16, 2001)

THE REJECTIONS

1. The Examiner provisionally rejected claims 1, 4, 9, and 12-16 under 35 U.S.C. § 101 as claiming the same invention as that of claims 1-20 of the then-copending Sodergren application.[1] Ans. 3-5.[2]
2. The Examiner rejected claims 1, 4, and 6-9 under 35 U.S.C. § 103(a) as unpatentable over Abraham, Richter, and Takahashi. Ans. 5-8.
3. The Examiner rejected claims 12-14 under 35 U.S.C. § 103(a) as unpatentable over Abraham, Richter, Takahashi, and Cambron. Ans. 8-9.
4. The Examiner rejected claims 15 and 16 under 35 U.S.C. § 103(a) as unpatentable over Abraham, Richter, Takahashi, and Reul. Ans. 9-10.
5. The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as unpatentable over Abraham, Richter, Takahashi, and Liebl. Ans. 10.

THE DOUBLE PATENTING REJECTION

The Examiner finds that independent claim 1 recites the same invention as claims 1, 11, and 18 of the then-copending Sodergren application, and summarizes this alleged correspondence in a table. Ans. 3-4. The Examiner similarly summarizes the alleged correspondence between independent claim 4 of the present application with claims 8, 16, and 19 of the Sodergren application. Ans. 4.

[1] This application has since issued as U.S. Patent 7,603,471 B2.
[2] Throughout this opinion, we refer to (1) the Appeal Brief filed May 16, 2007; (2) the Examiner's Answer mailed June 23, 2008; and (3) the Reply Brief filed August 28, 2008.

Despite the lack of an "embedded operating system" in the claims of the Sodergren application, the Examiner nonetheless asserts that statutory double patenting is appropriate given the similarities in claim language. According to the Examiner, an embedded operating system with the recited modules in claims 1 and 4 is allegedly "redundant," since it is purportedly "well-known in the art that an operating system is just the installed foundation software that controls the usage of hardware resources on a device . . . ." Ans. 11.

Appellant argues that statutory double patenting is inappropriate since independent claims 1 and 4 both require, among other things, an embedded operating system—a feature not recited in claims 1, 11, and 18 of the Sodergren application. App. Br. 5-7.

The issue before us, then, is as follows:

ISSUE

Under § 101, has the Examiner erred in rejecting independent claims 1 and 4 by finding that they recite the same invention as that claimed in the then-copending Sodergren application, despite the claims of the Sodergren application not reciting an embedded operating system?

FINDINGS OF FACT (FF)

1. Independent claim 1 of the present application recites, in pertinent part, "an integrated CPU including an embedded operating system, said operating system including software interface modules and device drivers

for one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of [a] plurality of protocols . . . ." Claims App'x, Claim 1.

2. Independent claim 4 of the present application recites a similar limitation as that indicated above regarding claim 1, except that the term "including" is changed to "having." Claims App'x, Claim 4.

3. The claims of the Sodergren application do not recite an "embedded operating system." *See generally* Sodergren application, at 5-6.

PRINCIPLES OF LAW

Under 35 U.S.C. § 101, the same invention (i.e., identical subject matter) may not be claimed twice, regardless of the presence of a terminal disclaimer. *In re Vogel*, 422 F.2d 438, 441 (CCPA 1970). Inventions are not the same if a claim of one invention can be literally infringed without literally infringing the other. *Id.*

But if the same invention is not claimed twice, the Examiner must determine whether the claim is merely an obvious variation of the other claimed invention. *Id.* If so, "a terminal disclaimer is required to prevent undue timewise extension of monopoly." *Id.* at 442.

ANALYSIS

We find the Examiner's statutory double patenting rejection of independent claims 1 and 4 is erroneous for one simple reason—the lack of an "embedded operating system" in the claims of the Sodergren application.

FF 3. This omission is fatal to the Examiner's rejection, for § 101 only prohibits twice claiming the *same invention*, namely *identical* subject matter. *Vogel*, 422 F.2d at 441 (emphases added).

Simply put, the absence of an embedded operating system in the claims of the Sodergren application means that those claims could be literally infringed with an adapter otherwise containing all the features of those claims, yet not literally infringe independent claims 1 and 4 of the present application which require an embedded operating system. In view of this disparity, the inventions of claims 1 and 4 of the present application and the Sodergren application are therefore not the same. *See id.*

Although we recognize that claims may be worded differently and still define the same invention,[3] that is not the case here. In this regard, the Examiner's assertion that the recited embedded operating system is allegedly "redundant" (Ans. 11) is unavailing. Even assuming, without deciding, that such embedded operating systems are "well-known in the art" as the Examiner contends (*id.*) (a finding that that has not been evidenced on this record in any event), bridging such a gap between the claimed inventions in this manner is hardly appropriate for a statutory double patenting rejection. *See Vogel*, 422 F.2d at 441-42. And to the extent that this analysis is intended to satisfy *Vogel*'s second prong which asks whether the inventions are obvious variations of each other (*see id.*) has simply not been established on this record. Nor will we engage in such an inquiry here in the first instance on appeal.

[3] *See, e.g., Vogel*, 422 F.2d at 441 ("[A] claim reciting a length of 'thirty-six inches' defines the same invention as a claim reciting a length of 'three feet,' if all other limitations are identical.").

We are therefore persuaded that the Examiner erred in rejecting independent claims 1 and 4 under § 101, and dependent claims 5-9 and 12-16 for similar reasons.

THE OBVIOUSNESS REJECTION OVER ABRAHAM, RICHTER, AND TAKAHASHI

Regarding independent claims 1 and 4, the Examiner finds that Abraham discloses a multi-protocol adapter with every recited feature except for, among other things, daughter board slots and other recited elements of claim 4. The Examiner, however, cites Richter for these features (as well as Takahashi for a piezoelectric speaker) in concluding that the claims would have been obvious. Ans. 5-7.

Appellant argues, among other things, that Abraham fails to teach or suggest an integrated CPU having an embedded operating system, with the operating system including software interface modules and device drivers as claimed. App. Br. 8-9; Reply Br. 3-4.

The issue before us, then, is as follows:

ISSUE

Under § 103, has the Examiner erred in rejecting claims 1 and 4 by finding that Abraham, Richter, and Takahashi collectively would have taught or suggested a multi-protocol adapter with an integrated CPU including an embedded operating system, where the operating system includes software interface modules and device drivers?

ADDITIONAL FINDINGS OF FACT

4. Abraham discloses a generic multichannel backplane bus architecture that can provide (1) multiple local area network (LAN) protocols, and (2) simultaneous multiple protocol-independent generic communication channels on a backplane. Abraham, col. 1, ll. 10-23.

5. To this end, Abraham's system includes a "concentrator" 10 with modules that are connected to a backplane bus.[4] The modules include a controller module 18 and "media distribution modules" (e.g., fiber modules 14 and twisted pair modules 16) that provide a connection between a specific type of medium (e.g., twisted pair, fiber optic cable, coaxial cable) and the concentrator. Abraham, col. 9, ll. 3-19; Fig. 1.

6. In Figure 2, Abraham's concentrator 10 provides three different networks, each using a different protocol: (1) Channel A of the concentrator uses twisted pair media 28 and the Ethernet protocol; (2) Channel B uses the 100 Mbps Fiber optic Distributed Data Interface (FDDI) protocol; and (3) Channel C uses fiber optic media 48 and the fiber optic Ethernet protocol. Abraham, col. 1, ll. 39-40; col. 9, ll. 20-42; Fig. 2.

7. As shown in Figure 3, the concentrator's backplane bus architecture includes (1) control card module 128; (2) LAN management card 118; (3) media distribution modules 120; and (4) bridging and routing modules 122, 124. Abraham, col. 10, ll. 4-33; Fig. 3.

8. The bridging and routing modules (1) convert one protocol to another and/or (2) filter (receive transmissions on one port and selectively transmit them on another port). Abraham, col. 10, ll. 22-28; Fig. 3.

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[4] "[A] backplane bus is a wiring center common to a single platform and shared by a number of users . . . ." Abraham, col. 1, ll. 47-49.

9. Abraham's Figure 8 shows hub management architecture where LAN management modules 118 are associated with each channel A-C. Each LAN management module has an agent 182 that is the network management entity that controls and reports management status to other agents. Abraham, col. 17, ll. 5-30; Fig. 8.

10. Richter describes in the Background section a system 101 with CPU 140 that controls system operations. Richter, col. 1, ll. 25-53; Fig. 1A.

ANALYSIS

We will not sustain the Examiner's obviousness rejection of independent claims 1 and 4 which call for, in pertinent part, a multi-protocol adapter with an integrated CPU including an *embedded operating system*, where the operating system includes software interface modules and device drivers. While the Examiner is correct that an operating system is the software that controls the usage of hardware resources on a device (Ans. 11), it is more than that.

Notably, the same dictionary that the Examiner cites to support this proposition indicates that an "operating system" is "[t]he software that controls the allocation and usage of hardware resources such as memory, central processing unit (CPU) time, disk space, and peripheral devices. The operating system is the *foundation software on which applications depend.* Popular operating systems include Windows 98, Windows NT, Mac OS, and UNIX."[5]

[5] *Microsoft Computer Dictionary*, 5th ed., 2002, at 378 (emphasis added). Although this dictionary was published after the effective filing date of the invention, it is nevertheless consistent with the Examiner's citation (*see* Ans.

Based on this definition, an "operating system" is not only the software that controls the allocation and usage of hardware resources, but also is the foundation software on which applications depend. This functionality is reasonably consistent with Appellant's characterization of an operating system which includes not only code running on a machine, but also enables applications to be written and loaded onto the machine. Reply Br. 3-4. Ordinarily skilled artisans would therefore understand an operating system to have such a capability.

Also, an "embedded system" is defined as "[m]icroprocessors used to control devices such as appliances, automobiles, and machines used in business and manufacturing. . . . . An embedded system is often built onto a single chip or board and is used to control or monitor the host device . . . ."[6]

When reading these two definitions together, we find that an "embedded operating system" is operating system software that controls the allocation and usage of hardware resources, and is the foundation software on which applications depend, where this software is built onto a single chip or board.

Thus, we construe "an integrated CPU with an embedded operating system" as claimed as a CPU with built-in operating system software that controls the allocation and usage of hardware resources, and is the foundation software on which applications depend.

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11)—a source whose applicability is undisputed. In any event, this definition refers to operating systems that existed before the filing date of the present invention (e.g., Windows 98).

[6] *Id.* at 190-91.

Based on this construction, we find the Examiner's reliance on Abraham problematic. First, the Examiner does not squarely identify the operating system in Abraham. Nevertheless, the Examiner does refer to Abraham's "concentrator" in connection with this limitation. Ans. 6. While Abraham's concentrator converts various protocols associated with networks using diverse transmission media (FF 4-6, 8), we still fail to see how this concentrator has an *integrated CPU with an embedded operating system* as noted above, let alone that such an operating system includes software interface modules and device drivers as claimed.

To be sure, the concentrator's backplane bus architecture in Abraham includes (1) a control card module 128; (2) LAN management card 118; (3) media distribution modules 120; and (4) bridging and routing modules 122, 124. FF 7. And the bridging and routing modules can perform protocol conversion functions. FF 8. But apart from noting the concentrator's functions, the Examiner has simply failed to show how any of its modules contains an integrated CPU with an embedded operating system under the ordinary and customary meaning of the term.

We reach this conclusion acknowledging the agent within the concentrator's LAN management module which controls and reports management status to other agents. FF 9. Leaving aside that fact that an agent is understood to be an automatically-implemented program as Appellant indicates (Reply Br. 4), the Examiner has not shown how such an agent constitutes an integrated CPU with an embedded operating system as claimed in light of its ordinary and customary meaning noted above.

We therefore find that Abraham fails to teach or suggest a multi-protocol adapter with an integrated CPU including an embedded operating system, where the operating system includes software interface modules and device drivers as claimed.

Nor does the Examiner's reliance on Richter or Takahashi cure this deficiency. While Richter mentions a CPU in connection with controlling operations for a conventional system (FF 10), that general teaching falls well short of teaching or suggesting that it would have an embedded operating system as claimed. Therefore, even if these references were combinable as the Examiner proposes, the recited limitations would still not be taught or suggested.

We are therefore persuaded that the Examiner erred in rejecting independent claims 1 and 4, and dependent claims 6-9 for similar reasons. Since this issue is dispositive of our reversal of these claims, we need not reach Appellant's additional arguments regarding the simultaneous interaction limitation of claim 4 (App. Br. 10) or the limitations of claims 6-9 (App. Br. 10-11).

OTHER OBVIOUSNESS REJECTIONS

Since the Examiner has not shown that the references cited in the obviousness rejections of dependent claims 5 and 12-16 (Ans. 8-10) cures the deficiencies noted above regarding independent claim 1, we will not sustain these rejections for similar reasons.

CONCLUSION

The Examiner erred in rejecting claims 1, 4-9, and 12-16 under §§ 101 and 103.

ORDER

The Examiner's decision rejecting claims 1, 4-9, and 12-16 is reversed.

REVERSED

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